

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 September 2000 (21.09.2000)

PCT

(10) International Publication Number
WO 00/54724 A3

(51) International Patent Classification⁷: A61J 3/00

(21) International Application Number: PCT/EP00/02222

(22) International Filing Date: 14 March 2000 (14.03.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
FI99A000052 16 March 1999 (16.03.1999) IT

(71) Applicant: MOLTENI L. E. C. DEI FRATELLI
ALITTI SOCIETA' DI ESERCIZIO S.P.A. [IT/IT];
Strada Statale 67, Tosco Romagnola, Località Granatieri,
I-5018 Scandicci (IT).

(72) Inventor: ANGELI, Roberto; Via dell'Acciaio 44,
I-50018 Scandicci (IT).

(74) Agent: GERVASI, Gemma; Notarbartolo & Gervasi
S.p.A., Corso di Porta Vittoria, 9, I-20122 Milan (IT).

(81) Designated States (*national*): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

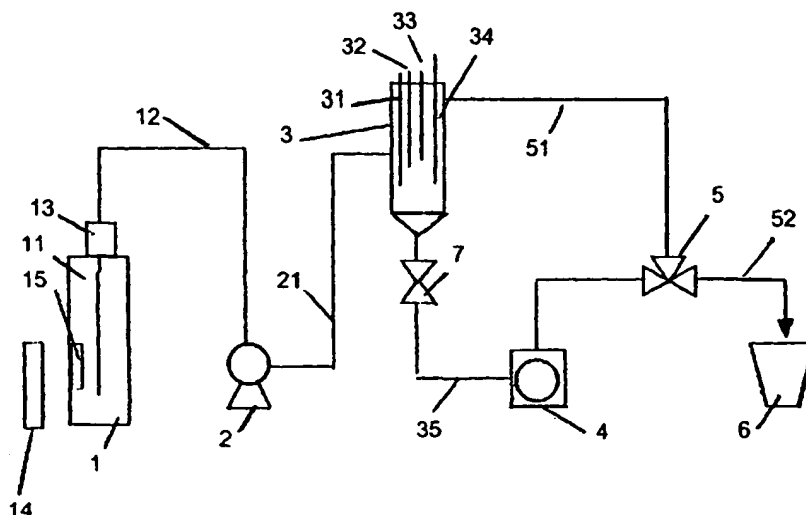
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— With international search report.

(88) Date of publication of the international search report:
21 December 2000

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PRECISION DISPENSER FOR LIQUIDS



(57) Abstract: A precision dispenser for liquids consisting of: a first pump (2) fed by a flask (1) containing liquid, connected thereto via an attachment (13) provided with a suction tube (16); an intermediate reservoir (3) fed by the first pump (2) and provided with one or more level probes (31-33); a second, high-precision, pump (4) downstream of said reservoir (3); a three-way solenoid valve (5) set downstream of the pump (4), from which it receives the liquid at input, and having two output ways, one output leading to the reservoir (3) and the other leading to a final receptacle (6) for collecting the liquid delivered; and a microprocessor unit for control and management of the pumps (2, 4), probes (31-33) and maintenance functions.

INTERNATIONAL SEARCH REPORT

Inter. Appl. No.

PCT/EP 00/02222

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61J3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61J G07F G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CH 456 885 A (OLLAND F W) 31 July 1968 (1968-07-31) the whole document	1,2,8,16
A	--- PATENT ABSTRACTS OF JAPAN vol. 014, no. 057 (C-0684), 2 February 1990 (1990-02-02) & JP 01 284327 A (KANEBO LTD), 15 November 1989 (1989-11-15) abstract	1,2,16
A	--- EP 0 763 728 A (SCITEC KABUSHIKI KAISHA ; TOA ELECTRONICS (JP)) 19 March 1997 (1997-03-19) column 15, line 3 -column 16, line 57; figure 15 --- -/-	1,2,8,16

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance.
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

7 July 2000

Date of mailing of the international search report

72 08 00

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Rosenblatt, T

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 00/02222

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 3 887 110 A (PORTER LAWRENCE C) 3 June 1975 (1975-06-03) column 3, line 59 -column 4, line 6; figure 2</p> <p>-----</p>	1,3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 00/02222

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9, 16, 17

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-9,16,17

precision dispenser for liquids and method for dosing liquids

2. Claims: 10-15

flask for liquids

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter. Appl. Application No

PCT/EP 00/02222

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CH 456885 A		NONE	
JP 01284327 A	15-11-1989	NONE	
EP 0763728 A	19-03-1997	US 5900136 A	04-05-1999
		US 5762769 A	09-06-1998
		WO 9630749 A	03-10-1996
US 3887110 A	03-06-1975	NONE	